



PHILIP HUNTER TIMBERLAKE, 1883-1981

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Philip Hunter Timberlake, Associate Entomologist Emeritus, University of California, Riverside died April 17, 1981, at the age of 97. He was born June 5, 1883 at Bethel, Maine to Isadore Margaret (nee Billings, 1850-1897) and Davis True Timberlake (1844-1928) who were married on July 6, 1873. Of the seven children, Philip H. Timberlake was the fifth born and the second son of the family. His father was a school teacher who taught Latin and Greek at the Lancaster Academy, Lancaster, New Hampshire.

Upon graduation from Bowdoin College, Brunswick, Maine, Mr. Timberlake was awarded an A.B. in 1908 having matriculated in the liberal arts. Following graduation he entered Harvard University in 1909 and in 1910 was awarded an A.M. in biology. His first career employment was as an Assistant Agent and Expert in the Gypsy Moth Laboratory, U.S.D.A., Melrose Highlands, Massachusetts between 1909-1910. During this time he developed a sensitivity to moth scales and was transferred to a U.S.D.A. laboratory, Bureau of Entomology at Whittier, California where he commenced a study of beneficial insects as Agent and Expert in 1910-1912. Later in 1912 he was transferred to a U.S.D.A. laboratory, Bureau of Entomology at Salt Lake City, Utah where he served until 1914 as Agent and Expert investigating alfalfa weevil parasites. From 1914 until 1924 he was stationed with the Hawaiian Sugar Planters Experiment Station in Honolulu, Hawaii as an Associate Entomologist concerned with the biological control of sugar cane insects. He also served as Curator of the collection and published a list of the types contained therein (1922, *Proc. Hawaiian Entomol. Soc.*, 5:174-177). It was during this period that Mr. Timberlake married Edith Milhous in Otto Swezey's home in Honolulu on November 26, 1917. Mrs. Timberlake had been a secretary at the University of California, Berkeley prior to moving to Whittier, California. Three children were born, all in Hawaii, and now all reside in California: Elizabeth Paldanius in Riverside; Philip Franklin Timberlake, M.D. in Newport Beach; and Priscilla MacLeod in San Anselmo. Mrs. Timberlake passed away in July of 1972 in Riverside. She was born in Jennings County, Indiana and her family had come to California in 1896. Mrs. Timberlake was an aunt of former President Richard Milhous Nixon.

By the early 1920's Mr. Timberlake's research and publications on beneficial insects, particularly on chalcidoid wasps and ladybird beetles, attracted international attention, and in 1924 he was offered and accepted a position as Associate Entomologist in the biological control program of the University of California at Riverside (then known as the Citrus Experiment Station). As his appended bibliography reveals, Mr. Timberlake continued research on the beneficially important parasitic Hymenoptera after assuming his new duties, but within a few years he began to shift more and more of

his research effort to a taxonomic study of the bees, especially those of southern California and the adjacent desert areas of the southwestern United States. During this early period of transition in jobs, he began an intensive program of collecting insects generally on the campus at Riverside. As time and opportunity permitted he made numerous collecting trips especially in southern California including the deserts. His collecting and research interests were greatly influenced by T. D. A. Cockerell who identified much of his early collection of bees and encouraged Mr. Timberlake to continue his collecting of them. As time elapsed and much new material was collected and identified, Cockerell deposited on loan with Mr. Timberlake a very sizeable collection of his North American bee types. These types, eventually to be deposited on the completion of Mr. Timberlake's studies in the collections of the California Academy of Sciences, San Francisco, and Cockerell's continued interest and encouragement resulted in Mr. Timberlake's nearly complete concentration on the taxonomic study of bees, notably those of western North America. This is clearly revealed in Mr. Timberlake's bibliography starting with item 33 and continuing with few exceptions for the balance of his publications. The genus *Perdita* had fascinated Cockerell and as Mr. Timberlake's field efforts intensified and his collection grew so did his own resolve to make known the taxonomy of this genus. Prior to World War II Mr. Timberlake had completed a large manuscript on the taxonomy of the genus *Perdita*, but he could not find a publisher. This situation, however, changed after World War II and with his retirement in 1950 he was inundated with newly made collections of this genus from virtually all parts of North America extending well south into Mexico. He developed a plan to publish the work in a series of parts and the project gained support for publication in the University of California Publications in Entomology. After the published sections began to appear, his project received additional support in the form of three grants from the National Science Foundation. In all, seven parts of this revisional study of the genus *Perdita* were published between 1954 and 1968 (see bibliography items 77, 82, 87, 88, 96, 98, and 101) plus two supplemental parts were subsequently issued (bibliography items 105 and 114) along with several shorter papers describing new species. At the beginning of his project on these bees about 180 species had been described from North America. When the Catalog of Hymenoptera in America north of Mexico was published in 1979 more than 500 species were listed and this does not take into consideration the great number of species described by Mr. Timberlake from Mexico. The study of this genus of bees not only has contributed importantly to our understanding of their taxonomy, but also has made known much about their floral relationships and laid the foundation for a thoroughgoing analysis of their intrafloral ecology and biology.

A glance through volumes 1 and 2 of the Catalog of Hymenoptera in America north of Mexico reveals the breadth as well as an idea of the

number of the contributions that he made to the taxonomy of this order. While much of his work on the North American bee fauna was concentrated on the genus *Perdita*, it is abundantly clear from his bibliography that he made major contributions to most of the recognized families of the Apoidea.

Although it is well known that Mr. Timberlake described a large number of new taxa of Hymenoptera (genera, subgenera, species and subspecies) from America north of Mexico, the exact number of these through 1976 was unknown until recently because of the complexities in individually counting them and then comparing these with those of other authors. On the basis of the recently published Catalog of Hymenoptera in America north of Mexico (1979) this became possible owing to the computerized data base of that catalog. Listed below according to decreasing total numbers of new taxa proposed by authors, one finds that Mr. Timberlake ranks sixth among the authors who have described the largest numbers of new taxa from America north of Mexico.

New Taxa of Hymenoptera Described in America North of Mexico

Author	Volume 1	Volume 2	Total
1. Ashmead	2593	263	2856
2. Cresson	1293	951	2244
3. Cockerell	37	1882	1919
4. Viereck	919	436	1355
5. Provancher	948	159	1107
6. Timberlake	75	744	819
7. Girault	804	—	804

Additional new taxa of bees were subsequently proposed and described by Mr. Timberlake after the cut-off dates of the above cited catalog so that the total numbers of such taxa for him exceed that listed above. Thus, for example, while the cut-off date in the catalog for the Apoidea is through 1976, Mr. Timberlake published six additional papers on bees in which many new species were described (see items 109–114 in Timberlake bibliography). These new taxa appreciably increase his total number described from America north of Mexico. It also should be remembered that he described a large number of new taxa from Mexico, especially pertaining to the genus *Perdita*. It seems quite possible that the total number of new taxa described by him during his lifetime exceeds 1000 for the Hymenoptera alone.

In the process of his own studies Mr. Timberlake accepted miscellaneous collections of bees from most of North America for identification. As a consequence of this practice, he made a major contribution to the curation of North American collections by placing in order nearly all groups of bees. The impact of this service to the scientific community extends into the literature where Mr. Timberlake is acknowledged repeatedly for his help in

identification. Moreover, he freely loaned material that he had collected to others for their studies of innumerable groups of bees and other insects. In a very real sense he has had a lasting influence on the development of knowledge pertaining to the North American Hymenoptera in general, and to the Apoidea in particular.

Mr. Timberlake maintained membership in the following societies: American Entomological Society, Cambridge Entomological Club, Entomological Society of Washington, Hawaiian Entomological Society, Pacific Coast Entomological Society.

Mr. Timberlake was an ardent and quietly enthusiastic field researcher. He was thorough and meticulous in keeping and preserving his specimens and the data associated with them. At almost every opportunity he was ready to venture forth into the field, either by himself as he did for years almost daily during the lunch hour on the Riverside Campus, or with others on all day or on trips of longer duration. Aside from those trips made with colleagues on the Riverside staff, he participated in a great number of field trips to the deserts of California, as well as to other locations, in the company of others like T. D. A. Cockerell, C. M. Dammers, Paul D. Hurd, Jr., Edmund C. Jaeger, E. Gorton Linsley, H. L. MacKenzie, Charles D. Michener, George A. Salt, and Pedro Wygodzinsky. He was an intellectually stimulating companion and decidedly knowledgeable about the biota in which collecting was being pursued. He reasoned that since insects were dependent directly or indirectly on the flora for their livelihood that anyone studying them should acquire as thorough a botanical knowledge as possible. Observing him in the field revealed that this intimate knowledge of the biota guided him in his collecting efforts. Thus, for example, Cockerell a few months after Mr. Timberlake returned from one of his trips to the desert wrote: "Last March [1927] Mr. Timberlake went out into the Colorado Desert and brought back a series of remarkable new bees, including the species now described, one a new genus (*Xeralictus*), the other a new subgenus or genus (*Megandrena*) according to the point of view." For each of these new taxa the reader finds, as he nearly always will, that the specimens are labeled as to the flowers from which they were collected. It is a hallmark of the insect collection made by P. H. Timberlake that the material is not only carefully prepared, but is labeled in a thoroughly informative manner. These high data standards have provided the most comprehensive assemblage of southwestern United States bees in existence and consequently the collection is especially valuable not only because of the completeness of data, but also because the material represents one of the most important baseline collections of these and other insects from southern California and adjacent areas. His field work and careful records of the species of bees found at Riverside has contributed immensely to our knowledge of a local fauna of bees, as well as to their relationships with the flora. Fieldwork continued to be one of the most important aspects of Mr. Timberlake's

research and only near the end of his life was he forced to abandon it, primarily he repeatedly said, "because of my failing eye sight."

In the mid-1930's, Linsley was assigned temporarily to teach introductory entomology at the University of California at Los Angeles and to build up a collection of insects, primarily for use in teaching. Among the insects assembled were a large number of endemic species of bees. His supervisor, Professor A. M. Boyce, suggested that Timberlake might help with their identification. They were taken to Riverside where Timberlake not only named the bees but inspired Linsley's interest in their taxonomy and biology, especially their flower relationships. Thus began a friendship, nurtured by numerous trips to the desert and southern California mountains in search of bees, which was sustained throughout Timberlake's life and usually involved one or two visits to Riverside each year and much correspondence. Previously he had given similar help and encouragement to Charles D. Michener when he was a student in high school and beginning to develop his life-long interest in bees.

Timberlake enjoyed having students along with him in the field and because of his considerable knowledge of the biota, the students also profited by this association. Thus during the years of 1952–1959, 1961–1962, he participated in 10 of the annual spring collecting trips to the deserts and adjacent areas of California. These field parties, led by Paul D. Hurd, Jr., were made on behalf of the California Insect Survey, University of California, Berkeley. They were camping trips of about two weeks duration and were designed to survey the insect fauna of the areas visited, as well as to train students specializing in systematic entomology in the techniques of insect collecting, preservation, and related operations under field conditions. Some of the field sites have since become well known type localities and include such place names in California as: Borego (currently Borrego), Box Canyon, Chuchupate Ranger Station, Cronese, Descanso Ranger Station, Goldstone Lake, Hopkins Well, Ivanpah, Kramer Hills, Plaster City, Pozo Ranger Station, and Surprise Canyon. It was during these trips that Mr. Timberlake shared his knowledge of insects and the California flora with students majoring in systematic entomology at Berkeley. Among these students were Bernard J. Adelson, John K. Drew, Robert L. Langston, Evert E. Lindquist, Gordon A. Marsh, Charles W. O'Brien, Jerry A. Powell, Jack R. Powers, Jerome G. Rozen, Jr., Robert O. Schuster, Gerald I. Stage, Wallace A. Steffan, Robbin W. Thorp, Catherine A. Toschi (now Tauber), and Marius S. Wasbauer. During this decade of field activities on these spring trips Mr. Timberlake went from 69 to 79 years of age and some of the students commented that he was in better physical condition than they.

No matter how trying or difficult the conditions became in the field he always maintained a good sense of humor. However, he had little patience. If for example, someone got a vehicle stuck in the sand, he would simply leave the scene, net in hand and collect until the vehicle was freed. Once

the center pole of a tent in which he and others were sleeping snapped due to high winds and collapsed over everyone. Almost casually, he gently shook the companion sleeping nearest him and suggested that it might be a good idea if everyone abandon the tent before they suffocated. Only once was he heard to utter an intemperate epithet. He observed that one of his favorite collecting sites in Palm Springs was converted into a drive-in movie. One of the students suggested that that was progress and to that Mr. Timberlake quickly replied, "Progress HELL!"

In the fall of 1961 (September) a two week field trip was made by Mr. Timberlake and Paul Hurd from Riverside, California to New Mexico with the idea of collecting bees at as many localities as possible, but with special emphasis on localities in southern New Mexico where T. D. A. Cockerell had collected bees while on the staff of the University of New Mexico before the turn of the century. The planned field work was particularly concerned with sampling bees at fall flowering plants in order to obtain as many as possible of the bee species described from the region by Cockerell. Inevitably the trip became known as: "Following in the Footsteps of T. D. A. Cockerell." During the trip a total of 45 collecting stops were made with the majority of the sites being in New Mexico (28), fewer in Arizona (17), and only one in southern California (Desert Center). Nearly 10,000 specimens were collected on that trip and the bulk of them from areas previously collected by Cockerell. Mr. Timberlake, then 78, was especially pleased with the results. In regard to *Perdita* he subsequently wrote (October 12, 1961) that on *Baileya pleniradiata* at 3 miles west of Bingham, Socorro County, New Mexico: "I noted about 8 species of *Perdita* that evening (September 12), but on mounting the refuse material you handed me from that day or the next, I found about 15 species, and there may be more when the whole material is studied." The collecting results from this trip pertaining to *Perdita* are chronicled by Timberlake in his publications on that genus (see especially items 97, 100, 104).

Among the many collecting trips Mr. Timberlake made after his retirement in 1950 with other members of the staff of his department, most were made in the company of R. C. Dickson or Jack C. Hall, both exceptionally outstanding collectors. It was also during this time that Jack Hall shared Mr. Timberlake's office and performed innumerable kindnesses by extending much assistance both personal and professional that was so helpful to Mr. Timberlake in his day to day research work. It was largely because of this deeply appreciated support, as well as that from the Division of Biological Control that Mr. Timberlake was able to maintain his "8:00 am to 5:00 pm" working day schedule almost to the end of his life.

Some Genera and Species Named in Honor of P. H. Timberlake

ORTHOPTERA

Mohavacris timberlakei Rehn (Tanaoceridae)

HEMIPTERA

Aleurotithius timberlakei Quaintance and Baker (Aleyrodidae)

Dysmicoccus timberlakei Cockerell (Pseudococcidae)

COLEOPTERA

Hippodamia tibialis timberlakei Capra (Coccinellidae)

LEPIDOPTERA

Ethmia timberlakei Powell (Ethmiidae)

DIPTERA

Aphoebantus timberlakei Melander (Bombyliidae)

Apolysis timberlakei Melander (Bombyliidae)

Brevitrichia timberlakei Kelsey (Scenopinidae)

Cophura timberlakei Wilcox (Asilidae)

Dionaea timberlakei Walton (Tachinidae)

Epidideicus timberlakei Hall (Bombyliidae)

Itolia timberlakei Wilcox (Asilidae)

Nannocyrtopogon timberlakei Wilcox and Martin (Asilidae)

Phytophaga timberlakei Felt (Cecidomyiidae)

Stenopogon timberlakei Bromley (Asilidae)

Tipula timberlakei Alexander (Tipulidae)

Urophora timberlakei Blanc and Foote (Tephritidae)

Volucella timberlakei Curran (Syrphidae)

HYMENOPTERA

Ammoplanops timberlakei Pate (Pempredonidae)

Ancylandrena timberlakei Zavortink (Andrenidae)

Andrena timberlakei Cockerell (Andrenidae)

Ashmeadiella timberlakei Michener (Megachilidae)

Belomicrus timberlakei Pate (Crabronidae)

Brachycistis timberlakei Wasbauer (Tiphidae)

Calliopsis timberlakei Shinn (Andrenidae)

Ceratina timberlakei Daly (Anthophoridae)

Coccophagus timberlakei Compere (Encyrtidae)

Colletes timberlakei Stephen (Colletidae)

Conostigmus timberlakei Kamal (Megaspilidae)

Dioxys pomonae timberlakei Hurd (Megachilidae)

Dufourea timberlakei G. E. Bohart (Halictidae)

Euparagia timberlakei R. M. Bohart (Masaridae)

Gnathopasites timberlakei Linsley (Anthophoridae)

Heriades timberlakei Michener (Megachilidae)

Heteranthidium subtimberlakei Schwarz (Megachilidae)

Heteranthidium timberlakei Schwarz (Megachilidae)

Hylaeus timberlakei Snelling (Colletidae)
Hypomiscophus timberlakei Bridwell (Larridae)
Melissodes timberlakei Cockerell (Anthophoridae)
Nomadopsis timberlakei Rozen (Andrenidae)
Nysson timberlakei R. M. Bohart (Nyssonidae)
Osmia timberlakei Cockerell (Megachilidae)
Oxybelus timberlakei R. M. Bohart and Schlinger (Crabronidae)
Peponapis timberlakei Hurd and Linsley (Anthophoridae)
Perdita timberlakei Cockerell (Andrenidae)
Plenoculus timberlakei Williams (Larridae)
Pseudopanurgus nebrascensis timberlakei Michener (Andrenidae)
Pseudopanurgus timberlakei Cockerell (Andrenidae)
Pterocheilus timberlakei R. M. Bohart (Eumenidae)
Solierella timberlakei Williams (Larridae)
Timberlakena Pate (Pemphredonidae)
Timberlakia Mercet (Encyrtidae)
Triepeolus timberlakei Cockerell (Anthophoridae)
Triopasites timberlakei Linsley (Anthophoridae)
Trypoxylon timberlakei Sandhouse (Larridae)
Xenosphex timberlakei Williams (Mellinidae)
Xeralictus timberlakei Cockerell (Halictidae)

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Additional information concerning the life and work of Mr. P. H. Timberlake is contained in the below cited press releases and magazine article. The articles accompanied by a photograph of him are so annotated.

Press Releases

- Retired scientist is simply wild over identity of wild bee types. *Banning Record*, Banning, California, page reference missing, May 20, 1964 (photograph).
- Bee expert, 84, catches 5,000 on hunting trip. *The Press*, Riverside, California, Section B, page 1, Monday, October 9, 1967.
- Nixon's famous scientist kinfolk. *Oakland Tribune*, Oakland, California, page 1-A, Sunday, December 12, 1971 (photograph).
- 'He has looked at more insects than any man alive or dead' [still going strong at 88]. *Press-Enterprise*, Riverside, California, page B-5, Sunday, March 5, 1972 (photograph).
- Retirement full-time job for bee-expert—[Bee expert eschews retirement]. *The Enterprise*, Riverside, California, County page, concluded on page 2, Tuesday, July 24, 1979 (photograph).
- University of California, Riverside [UCR's] world famous entomologist and bee specialist is dead at 97. *The Enterprise*, Riverside, California, Section C, page 1, Tuesday, April 21, 1981 (photograph, reprinted from March 5, 1972 article).

Magazine Article

- Michael Rogers, Is this the face that named a thousand bugs? *Esquire*, 78(3):108–109, 154, September 1972 (color photography).

This In Memoriam article was prepared by Paul D. Hurd, Jr., Senior Scientist, Smithsonian Institution, Washington, D.C., and E. Gorton Linsley, Professor of Entomology, Emeritus, University of California, Berkeley, with assistance of Jack C. Hall, University of California, Riverside. The photograph that accompanies this article was taken by the photographer of the University of California, Riverside, on the occasion of Mr. Timberlake's 87th birthday (June 5, 1970).